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EXAMINER

WINTER, GENTLE E

ART UNIT

PAPER NUMBER

1746

7

DATE MAILED: 01/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PL 7

**Office Action Summary**

Application No.

09/689,035

Applicant(s)

TUNNEY ET AL.

Examiner

Gentle E. Winter

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections--Withdrawn***

1. Applicant's amendments, corrections, and clarifications have obviated the objection(s) to the specification. Accordingly the objection(s) are withdrawn.

### ***Claim Rejections - 35 USC § 112--Withdrawn***

2. Similarly, Applicant's amendments, corrections, and clarifications have obviated the rejections made pursuant to 35 U.S.C. 112, consequently the rejection is withdrawn.

### ***Response to Arguments***

3. Applicant's arguments have been carefully considered but are not persuasive at this time, please see discussion below.

### ***Claim Rejections - 35 USC § 103--Maintained***

4. Claims 1-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 5,168,709 to Bombard in view of EP 552750A to Rudat.
5. In response applicant remarked:

[I]ndependent claim 1 defines a method of cleaning a pressurized container comprising the steps of: (1) providing a pressurized container containing an amount of anhydrous ammonia therein; (2) injecting a quantity of heated nitrogen gas into the container to form a nitrogen/anhydrous ammonia mixture; (3) venting the nitrogen/anhydrous ammonia mixture to a flare; and (4) repeating the injection of heated nitrogen gas into the container and venting to the flare until the concentration of the anhydrous ammonia within the mixture is less than or equal to about 10,000 ppm. Nothing in the art of record teaches or suggests this combination of steps to clean a pressurized container containing anhydrous ammonia.

Art Unit: 1746

6. Applicant has pointed to the steps of claim 1. The limitation is the preamble, which is given patentable weight because it appears to be essential to an understanding of the claim, i.e. it breathes life into the claim. The preamble recites:

A method of cleaning a pressurized container, the method comprising the steps of:

7. Initially it is noted that “cleaning” and “pressurized” are somewhat relative terms, and perhaps applicant is ascribing a different meaning to the terms than the meaning ascribed to the terms by the examiner. The term “cleaning” has been construed in a manner believed to be consistent with the specification and claims, namely an anhydrous ammonia concentration below 10,000 ppm. The term “pressurized” is construed as having an interior pressure greater than the exterior pressure. Admittedly it is not clear whether the container needs to be pressurized when it is being cleaned or if the claim is drawn to a pressurizable container. Bombard in the drawn toward a method of cleaning a pressurized (and pressurizable) tank. See e.g. column 7, line 53 commenting on the pressure during cleaning. Thus, seemingly the limitations in the preamble are present in Bombard.

8. The next limitation:

providing a pressurized container containing an amount of anhydrous ammonia, wherein the container has inlet and outlet valves

9. The pressurized container is discussed above, inlet and outlet valves are shown in the drawings of Bombard. The limitation “containing an amount of anhydrous ammonia” is admittedly not explicitly in the Bombard reference. See below for discussion.

10. The next limitation:

injecting a quantity of heated nitrogen gas into the container to form a nitrogen/anhydrous ammonia mixture

Art Unit: 1746

11. The injection of heated nitrogen is disclosed, but the formation of a nitrogen/anhydrous ammonia mixture is not disclosed. In lieu of the nitrogen/anhydrous ammonia mixture is a jet fuel nitrogen mixture. Again see below.

12. The final step is:

repeating the injection of the container with heated nitrogen gas and venting the mixture to the flare until the concentration of anhydrous ammonia is less than or equal to about 10,000 ppm.

13. Again this is disclosed (reducing the concentration below a selected level in the range 300-500 ppm. The Bombard reference, as applicant has correctly pointed out fails to disclose anhydrous ammonia, and uses a flare in lieu of Bombard's condenser. The distinction between anhydrous ammonia and fuel is somewhat blurred by applicant's disclosure suggesting that a litany of flammable fuels including LPG, and "other chemicals apparent to those skilled in the art." Consequently it is not clear why the artisan would not consider jet fuel. Factually, it is not clear that the applicant discounts the applicability of the present invention to a jet fuel system. It is also noted in passing that there is nothing suggesting that the present invention *is* not used with jet fuel. The open claim language certainly allows for the presence of a significant portion of jet fuel or other material.

14. For the above reasons the argument that the Bombard patent:

is not even similar to the present invention, in that the goal of the present invention is to reduce an amount of anhydrous ammonia from a pressurized container, not jet fuel from a jet fuel tank.

cannot be given full weight. The claim, as currently written, appears to differ only in the presence of ammonia and the flare.

15. The argument:

Moreover, the steps, machinery, and overall system are vastly different. Bombard uses a closed system, and a series of pumps and suctions to remove air and vaporized jet fuel from the fuel tank.

Art Unit: 1746

The air is forced through a vapor recovery unit to cause condensation of the vaporized jet fuel for collecting the jet fuel. The air is then heated and forced back into the fuel tank and the process is repeated until the walls of the tanks are dry.

Applicant's characterization of Bombard is seemingly not inconsistent with the position taken by the Office, although Bombard does disclose opening the system and vent to the air (not a flare) when the gas level falls below a predefined limit. The rejection of paper 3 was not intended to suggest that the systems were identical.

16. Applicant remarked:

The present invention, however, utilizes a system and a method that are vastly different from the Bombard patent. A quantity of heated nitrogen is injected into a pressurized container, such as a mobile pressurized railcar, having a quantity of anhydrous ammonia contained therein. The nitrogen gas combines with the anhydrous ammonia to form a nitrogen gas/anhydrous ammonia mixture. The mixture is then released from the container to a flare, where the anhydrous ammonia is incinerated. The method is repeated until the concentration of anhydrous ammonia reaches a predetermined level.

applicant's position with respect to the formation of anhydrous ammonia and venting to a flare are well taken. Bombard does not appear to explicitly disclose such steps. Nor did this examiner intend to infer that such was disclosed by Bombard.

The method described in the present invention can accomplish efficient cleaning of the container without the series of pumps or vacuums that is required by Bombard. Heating the nitrogen gas in the present invention provides sufficient pressure within the container so that merely opening a valve between the container and the flare allows the mixture to vent to the flare and be incinerated. In addition, the system described in the present invention is not a closed loop, in that the nitrogen gas utilized to form the nitrogen/anhydrous ammonia mixture is released to the atmosphere after venting to the flare.

17. The present claims use open claim language, and the argument above suggests that the present invention "can" perform the cleaning steps without the pumps or vacuums of Bombard. Unfortunately the claims, and to a lesser extent the arguments appear to suggest that such element may be used. In a larger sense, the nitrogen is heated prior to entering the container,

Art Unit: 1746

thus the nitrogen must be pressurized in some manner, or it seemingly would not flow into the pressurized tank.

18. Applicant further remarks:

More specifically, the nitrogen gas is not recovered and sent back to the container after the material to be removed (i.e. anhydrous ammonia) is removed from the nitrogen gas, as is described in Bombard. This ensures that the nitrogen gas injected into the container comes from a source of pure nitrogen that is free of anhydrous ammonia, and therefore more efficiently vaporizes and combines with the anhydrous ammonia to form the nitrogen gas/anhydrous ammonia mixture.

19. Again, Bombard is and was not intended to serve as an anticipatory reference.

20. In response to the argument:

It is respectfully submitted that Bombard cannot be combined with Rudat to arrive at the claimed invention. Bombard describes a closed system, whereby fuel vapor is recovered, and air is recirculated back into the fuel tank. The flare described by Rudat cannot be utilized in the Bombard system without fundamentally changing the Bombard system from a closed system to an open system.

21. It is not clear what is the basis for the statement that Bombard cannot be combined with Rudat to arrive at the claimed invention. Seemingly the substitution of the condenser of Bombard with the flare of Rudat would result in the structurally claimed invention. The tank of the claims admittedly contains anhydrous ammonia, which the flare is well suited to handle. Because the specification appears to indicate that the claimed method is equally applicable to fuels, seemingly the instant invention is either identically disclosed or obvious in view of the combined references.

22. Finally, the motivation for making the combination was argued:

Moreover, one of ordinary skill in the art would never have been motivated to modify Bombard with Rudat, assuming the patents were combinable, to arrive at the claimed invention. A teaching, suggestion, or incentive must exist to make the combination made by the Applicants. Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1983). No teaching, suggestion or incentive exists to combine Bombard with Rudat to arrive at the claimed invention. In fact, the Bombard system actually teaches away from utilizing anything like the flare as claimed in the present invention, because the flare would fundamentally change the nature of the system described in Bombard. Bombard describes a closed loop system wherein fuel vapor is recovered from a quantity of air via a condenser, and the air is then recirculated back into the fuel tank. As

Art Unit: 1746

described above, the present invention relates to a method of utilizing a system having an open end, wherein the nitrogen gas is thereafter released into the atmosphere after venting the mixture to the flare. No anhydrous ammonia is recovered, but instead is cleanly and efficiently incinerated in the flare.

23. Applicant's position with respect to "[a] teaching, suggestion, or incentive must exist to make the combination made by the Applicants" is well taken and believed to be both legally correct, and properly met by paper 3 and by this paper. Of note, *Interconnect Planning* is distinguishable from the instant case. In the Feil invention the combination was admittedly new, and it produced a new system having theretofore-unavailable attributes. In the instant case the same does not appear to be true. The selection of a flare or a condenser was well within the grasp of the artisan when the invention was made. It is unfortunate that applicant did not specifically address the statement of motivation made in paper 3, namely:

The artisan would have been motivated to make the instant combination for the reasons explicitly set forth by Rudat, namely, disposing of anhydrous ammonia using a flare.

24. It is presumed, based on the caselaw cited, that applicant is of the opinion that the artisan would not have been motivated to make the combination, and that the examiner improperly relied on applicant's disclosure to find the motivation for making the instant combination. In fact this did not occur. The reference explicitly discloses the flare as a means for disposing of ammonia. An artisan cleaning a container would have looked for a cost efficient manner of disposing of the waste product, or container residue. The art is replete with teachings disclosing technologies for treating vapor streams. Most common are flaring, adsorption, and condensation. From an economic perspective, condensation will generally be most suitable in situations where the waste stream is less volatile, and flaring will be more suitable in situations where the waste



Art Unit: 1746

stream is more volatile. For applicant's convenience two references have been provided in support of the examiner's position of obviousness.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 5,168,709 to Bombard in view of EP 552750A to Rudat.
2. With respect to claims 1-20, Bombard discloses a method of cleaning a pressurized container (column 1, line 18 *et seq.*), including providing a pressurized container containing an amount of liquefied gas (column 1, line 18 *et seq.*) wherein the container has inlet and outlet valves; injecting a quantity of heated (120F) nitrogen gas (air) (column 2, line 21 *et seq.*) into the container to form a nitrogen/tank-gas mixture; (column 2, line 30 *et seq.*) and venting this mixture and repeating the injection into the container of heated nitrogen gas and venting the mixture to flare until the concentration of liquefied gas reaches a predefined limit (column 2, line 30 *et seq.*). Bombard fails to explicitly disclose that the waste stream is sent to flare, and that the waste stream is anhydrous ammonia.
3. Rudat discloses the use of a flare for disposing of anhydrous ammonia. The specifics of the flare are disclosed in the translation of Rudat, (see the attached translation) disclosing a natural gas (propane or methane) and air inlet port(s) to facilitate the ignition and combustion of

Art Unit: 1746

the ammonia. The species of the waste stream is independent of the applicability of the method. Thus the artisan would have recognized the interchangeability of the two liquefied gases (petroleum versus anhydrous ammonia). The artisan would have been motivated to make the instant combination for the reasons explicitly set forth by Rudat, namely, disposing of anhydrous ammonia using a flare.

4. Bombard discloses ceasing operations when the level of gas is at a “safe level” (column 2, line 30 *et seq.*). Indisputably, a safe level would be no gas percent. Less than 10,000 ppm would include 0%. Further, Bombard discloses taking the concentration to about 0% of the lower explosion limit (column 7, line 16 *et seq.*). The tank is subject to internal inspection for leaks and repair (column 1, line 14 *et seq.*). The last sentence in the Bombard abstract discloses an apparatus for leak detection.

5. Official notice was taken and not disputed, and is therefore taken as fact, the weighing of a container and comparing the weight of the container is a well-known method of ascertaining the changed mass of the container. Similarly applicant has not argued that the tare concept is well known.

6. Heating the nitrogen in the line is disclosed in FIG. 7 and associated text. Also see (column 2, line 21 *et seq.*). Further, the presence of a flare line between the container and the flare is believed to be present in claim 1, (or there is an enablement issue with respect to claim 1) and is present references addressing claim 1. Bombard discloses sampling the liquefied gas and verifying the identity of the gas in the container (column 2, line 30 *et seq.*). Bombard further provides that the tank may be entered to remove debris (column 7, line 17 *et seq.*).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gentle E. Winter whose telephone number is (703) 305-3403. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

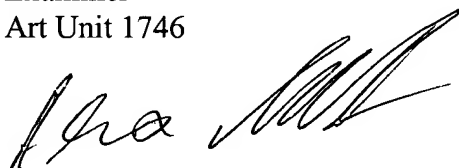
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Art Unit: 1746

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gentle E. Winter  
Examiner  
Art Unit 1746

December 28, 2002

A handwritten signature in black ink, appearing to read 'Alex Markoff', written in a cursive style.

ALEXANDER MARKOFF  
PRIMARY EXAMINER